



- I can identify corresponding parts of congruent triangles.
- I can use CPCTC to prove sides and angles are congruent in triangles.

Given $\triangle MPO \cong \triangle RST$, complete the following statements:

1. $\angle P \cong \angle S$

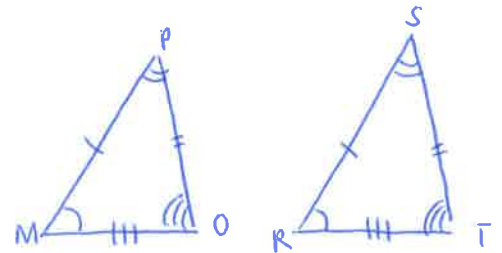
4. $\overline{MO} \cong \overline{RT}$

2. $\angle T \cong \angle O$

5. $\overline{SR} \cong \overline{PM}$

3. $\angle R \cong \angle M$

6. $\overline{ST} \cong \overline{PO}$



When you know triangles are congruent, and you state that corresponding parts are congruent (like you just did when you answered questions 1 – 6 above), you are using a property called **CPCTC**, which is a quick and easy way of saying :

C corresponding

P parts of

C congruent

T triangles are

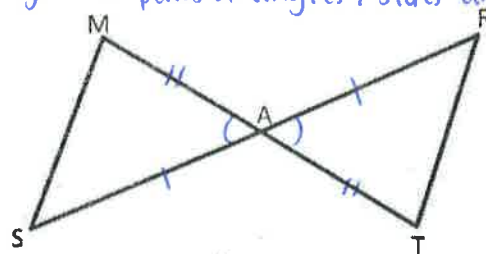
C congruent

** once you know 2 Δ 's are \cong , then any other pairs of angles / sides are \cong using CPCTC*

Example 1 :

Given : A is the midpoint of \overline{MT} and \overline{SR}

Prove : $\angle M \cong \angle T$

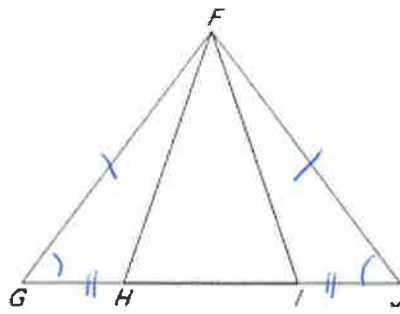


Statements	Reasons
1. A is the midpoint of \overline{MT}	1. Given
2. $\overline{MA} \cong \overline{TA}$	2. Def of midpoint
3. A is the midpoint of \overline{SR}	3. Given
4. $\overline{SA} \cong \overline{RA}$	4. Def of midpoint
5. $\angle MAS \cong \angle RAT$	5. VAT
6. $\triangle MAS \cong \triangle TAR$	6. SAS
7. $\angle M \cong \angle T$	7. CPCTC

Example 2 :

Given : $\overline{FG} \cong \overline{FJ}$, $\overline{HG} \cong \overline{IJ}$

Prove : $\overline{HF} \cong \overline{IF}$



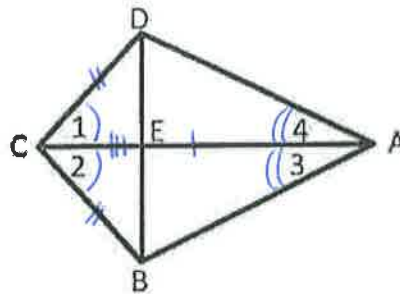
Statements	Reasons
1. $\overline{FG} \cong \overline{FJ}$	1. Given
2. $\angle FGH \cong \angle FJI$	2. Base Angles Theorem
3. $\overline{HG} \cong \overline{IJ}$	3. Given
4. $\triangle FGH \cong \triangle FJI$	4. SAS
5. $\overline{HF} \cong \overline{IF}$	5. CPCTC
6.	6.

} $\triangle FGH$ and $\triangle FJI$

Example 3 :

Given : $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 4$

Prove : $\triangle BCE \cong \triangle DCE$



Statements	Reasons
1. $\angle 1 \cong \angle 2$	1. Given
2. $\angle 3 \cong \angle 4$	2. Given
3. $\overline{AC} \cong \overline{AC}$	3. Reflexive Property
4. $\triangle CDA \cong \triangle CBA$	4. ASA
5. $\overline{CD} \cong \overline{CB}$	5. CPCTC
6. $\overline{CE} \cong \overline{CE}$	6. Reflexive Property
7. $\triangle BCE \cong \triangle DCE$	7. SAS
8.	8.

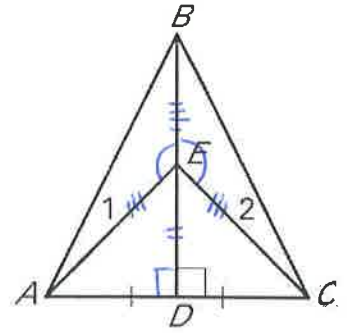
Example 4 :

Given: $\overline{AD} \cong \overline{CD}$, $\angle BDC$ and $\angle BDA$ are right angles, $\angle BEA \cong \angle BEC$

Prove: $\angle 1 \cong \angle 2$

* Part of $\triangle BFA$ and $\triangle BEC$

Goal: to prove those 2 \triangle 's are \cong



Statements	Reasons
1. $\overline{AD} \cong \overline{CD}$	1. Given
2. $\angle BDC$ and $\angle BDA$ are right angles	2. Given
3. $\angle BDC \cong \angle BDA$	3. all right \angle 's are \cong
4. $\overline{ED} \cong \overline{ED}$	4. Reflexive Property
5. $\triangle EDA \cong \triangle EDC$	5. SAS
6. $\overline{EA} \cong \overline{EC}$	6. CPCTC
7. $\angle BEA \cong \angle BEC$	7. Given
8. $\overline{BE} \cong \overline{BE}$	8. Reflexive Property
9. $\triangle BEA \cong \triangle BEC$	9. SAS

10. $\angle 1 \cong \angle 2$

10. CPCTC

$\triangle AED$ and $\triangle CED$

$\triangle BEA$ and $\triangle BEC$